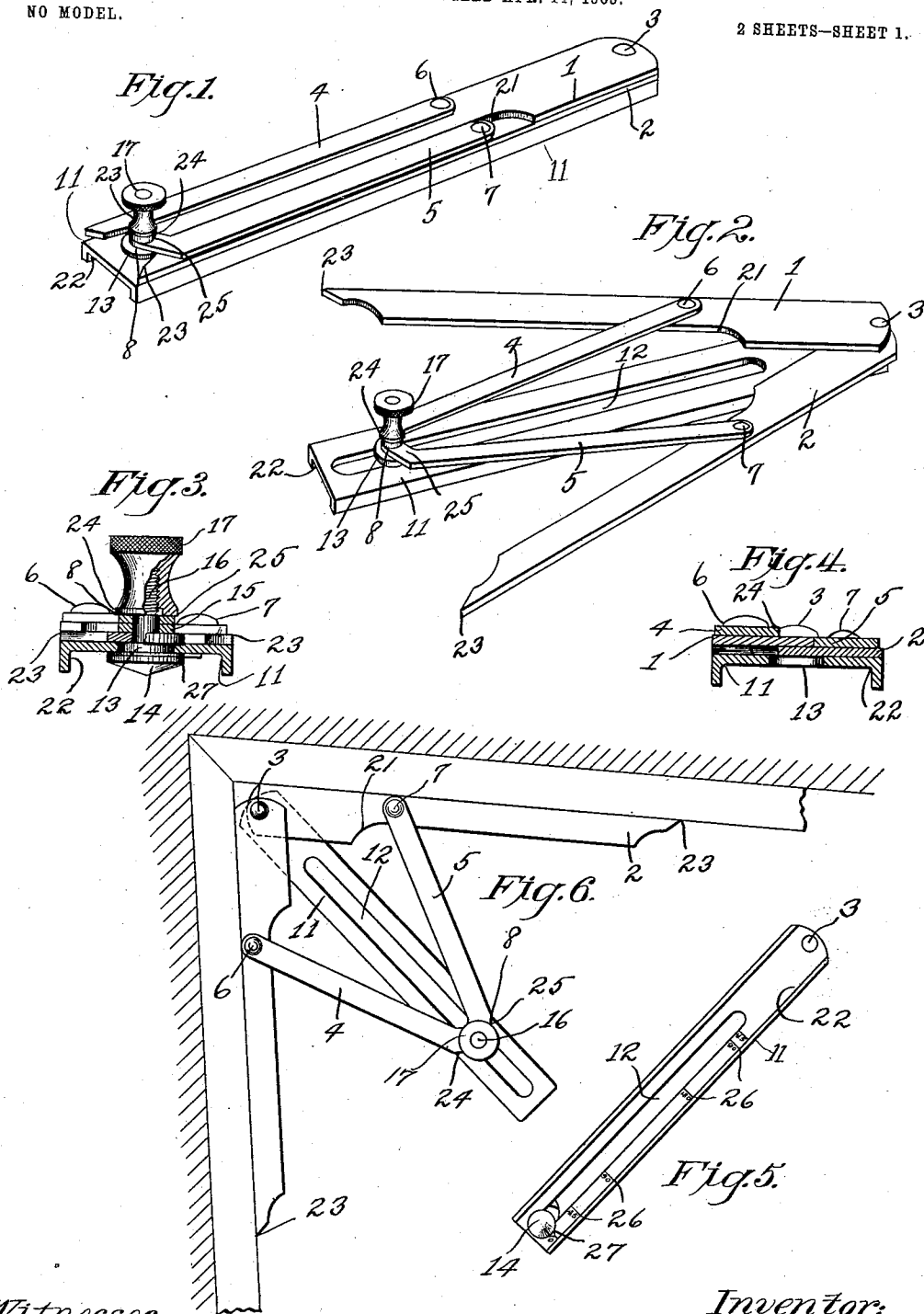


J. A. TRAUT.
ANGLE FINDER.

APPLICATION FILED APR. 14, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
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2 SHEETS—SHEET 2.

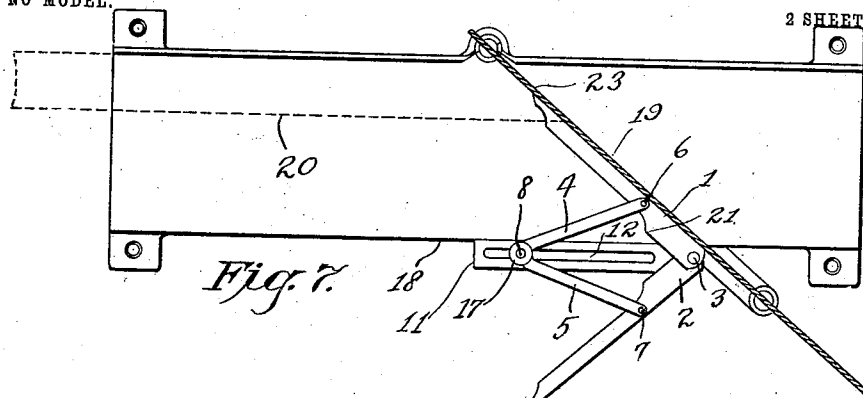


Fig. 7.

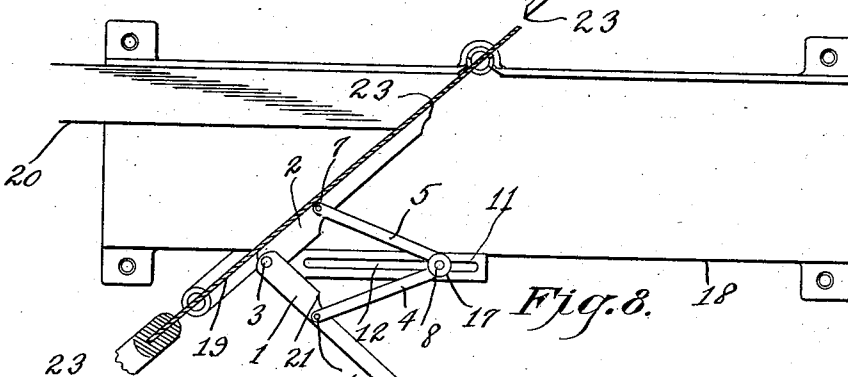


Fig. 8.

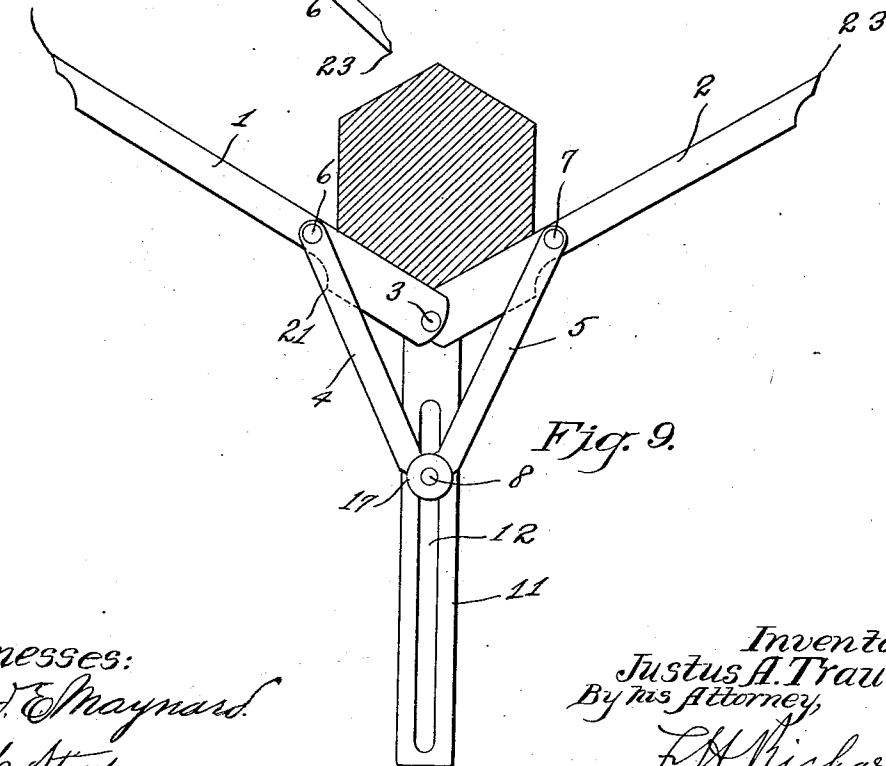


Fig. 9.

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UNITED STATES PATENT OFFICE.

JUSTUS A. TRAUT, OF NEW BRITAIN, CONNECTICUT.

ANGLE-FINDER.

SPECIFICATION forming part of Letters Patent No. 742,528, dated October 27, 1903.

Application filed April 14, 1903. Serial No. 152,560. (No model.)

To all whom it may concern:

Be it known that I, JUSTUS A. TRAUT, a citizen of the United States, residing in New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Angle-Finders, of which the following is a specification.

This invention relates to means for both finding and bisecting the outside and inside angles of woodwork, &c., for the purpose of mitering or otherwise fitting thereto moldings and other material with ease and accuracy.

In the drawings forming part of this specification, Figure 1 is a view of a folded bisecting angle-finder. Fig. 2 is a view of the same opened. Fig. 3 is an end view of the instrument, partly in section. Fig. 4 is a cross-section illustrating particularly the relation of the several pivoted members of the instrument when folded. Fig. 5 is a view of the underside of the folded instrument, showing graduations marked upon the stock thereof and a cooperating index. Fig. 6 illustrates the manner of using the instrument to find and bisect an inside angle. Fig. 7 is a view showing one way of using the instrument after the angle is found—viz., for setting the adjustable saw of a miter-box for cutting material to make a miter-joint, the saw being shown in section and the material in dotted lines. Fig. 8 is a view similar to Fig. 7, but showing how to set the saw for cutting material to match the part cut at Fig. 7; and Fig. 9 shows the manner of finding an outside angle.

In the several views like signs denote like parts.

My angle-finder comprises two arms 1 and 2, pivoted together end to end at 3, and a pair of links 4 and 5, pivoted to said arms between the ends of the latter, as at 6 and 7, said links being pivoted together at their other ends, as at 8. The arms 1 and 2 may be opened out to any extent to find an inside angle, as at Fig. 6, or they may be opened out still farther to find an outside angle, as at Fig. 9. It will be understood that a line drawn through the two pivots 3 and 8 bisects any angle found by said arms.

A stock 11 is pivoted at one end to the arms 1 and 2 by the single pivot 3. Said stock is

preferably slotted longitudinally, as at 12, to receive a cylindrical slide 13, having beneath the stock a head 14 and being reduced above said stock at 15 to form the pivot for the links 4 and 5, said slide being also threaded at 16 above said links to receive a nut 17, which binds the parts in any position to which they may be adjusted. It will be seen that the angle formed by either of the outer working edges of the arms 1 and 2 with either of the parallel sides of the stock is equal to half the angle formed by the outer edges of said arms. This instrument may be used to find either an inside or outside angle, as at Fig. 6 and Fig. 9, and may be then applied directly to the edge 18 of a miter-box, as at Fig. 7 and Fig. 8, either one or the other side edge of said stock being placed against the edge of the miter-box, so that one arm of the instrument may lie upon the bed of the miter-box and serve as a gage for setting the saw 19, so that when set at this angle the saw will cut the material 20 upon a miter corresponding to the angle formed by the arms, the instrument being set one way to cut one part of the miter and the other way to cut the other part of the miter, as at Figs. 7 and 8.

It will be observed that the arms, links, and stock may fold into substantial parallelism, as at Fig. 2; that the arms and links may be formed of flat metal strips to favor compact folding, said parts being thin and lying face to face when folded and the links when folded being substantially coterminous with the arms and the stock; that the arm 1 is longitudinally recessed upon its inner edge, as at 21, to enable the link 5, which is pivoted to the other arm, 2, to lie within the contour of the instrument when folded; that the links are connected to the stock 4 at their point of connection with each other; that the length of the arms is substantially equal to that of the stock; that all of the links and arms are mounted upon one face of the stock to favor the use of the instrument in the manner indicated at Figs. 7 and 8 and also to permit the stock to be set against the edge of a board or other material while a pencil or scriber is drawn along the arm to mark the angle on the board at which it is to be cut; that the stock may be longitudinally channeled, as at 22, for making it lighter, while leaving broad

side edges to give adequate bearing against the edge of a miter-box or a board, and also for receiving the head 14 of the pivotal slide, so that said head may not project from the stock; that the slot 12 is formed within the channeled portion of the stock; that the arms may be pointed, as at 23, to enable them to be used as a caliper, or as dividers, or, roughly, as compasses or scribes; that the inner end portions of the links may consist of overlapping ears 24 25, which are pivotally connected; that a scale is provided upon the channeled portion of the stock, Fig. 5, consisting of graduations 26, of which as many may be provided as desired, said scale cooperating with an index 27, which is confined between the head 14 and the stock, to indicate the obtuse and acute angles formed by the outer or working edges of the arms 1 2, so that the angle found by said arms may be read and so that when desired said arms may be set with facility to different angles; that by opening the instrument and setting the arms 1 2 in line by means of a straight-edge and then tightening the nut 17 the instrument may be used as a try-square or T-square; that by setting said arms at right angles by the use of an ordinary carpenter's square the instrument may be used as a center-square or miter-square, and that the instrument may also be used as a bevel-square and for other uses.

Variations may be resorted to within the scope of my improvements.

35 Having thus described my invention, I claim—

1. In an instrument of the character described the combination with a pair of flat blades pivoted together at their ends flatwise, of a stock pivoted thereto by the same pivot; and a pair of flat links pivoted together at their ends flatwise and respectively to the blades flatwise upon the sides opposite the stock, and one of the blades having its edge cut away to accommodate the link of the other blade when the parts are folded, the organization being such that in use a face of the stock may be presented directly to a sur-

face of the work and an adjacent flat face of either of the blades be presented directly to a transversely-disposed face of the work. 50

2. In an instrument of the character described the combination with a stock, of a pair of blades each pivoted at one end to the same end of the stock, a link pivoted to each blade midway of its center and the stock-pivot and of substantially the length of the free end of the blade past the point of attachment of the link thereto; one of said blades having its side cut away from a point between the link-pivot and the stock-pivot to receive the pivot and link of the other blade when the instrument is folded; and means to guide the other ends of the links in unison upon the stock. 65

3. In an instrument of the character specified the combination with a flat-faced stock, of a flat-faced blade pivoted at one end to one end of the stock with its flat face lying upon the face of the stock; a second flat-faced blade pivoted at the same point and with its flat face lying upon the opposite flat face of the first blade and when folded lying in substantial parallelism with each other and with the stock and cut away at one side; a guide on the stock; a flat-faced link controlled at one end by the guide and pivoted at the other end to the first blade with its flat face upon the face to which the second blade is pivoted, and when folded lying upon such face at a portion thereof exposed by the said cutting away of the second blade; a second flat-faced link controlled at one end by said guide and its flat face lying upon the flat face of the first link at such guide-controlled end and pivoted to the second blade upon the side opposite that lying upon the first blade, and when folded lying upon such face; the blades and links piling up when folded flat face to flat face upon each other and upon the stock. 85 90 95

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